



COMMONWEALTH *of* LEARNING



MINISTRY OF HIGHER EDUCATION

Report of the Benchmarking of Technology-Enabled Learning at Universiti Kebangsaan Malaysia



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Introduction and Background

Benchmarking is an important tool to compare and make deliberate progress in any field of human endeavour. For integration of technology for teaching and learning, this is relatively a new field. The Commonwealth of Learning (COL) promotes the use of technology-enabled learning (TEL) for improving access to and quality of education and training in the Commonwealth. The approach has been to support policy development, improve institutional capacities to develop blended courses, and strengthen technological infrastructure to leverage the potentials of TEL. The process follows three-phases systematically – (i) Preparation, (ii) Development and (iii) Maturation. Benchmarking is part of phase three, which assumes that the educational institution has taken steps to implement TEL in a systematic manner and is ready to take the next leap to continue the cycle of development. As such, the process of TEL benchmarking focuses on self-study, where relevant stakeholders from the institution participate thereby having active involvement, and the self-study report is validated by external experts and provide guidance and advice, where needed. Therefore, it is as much an internal exercise as an external validation activity.

The Ministry of Higher Education (MoHE), Government of Malaysia recognises the importance of technology-enabled learning in its *Malaysia Education Blueprint 2015-2025 (Higher Education)*, which focuses on global online learning. There is also a national eLearning policy (DePAN 2.0) and a detailed eLearning guidelines for Malaysia Higher Education Institutions (HEIs). Most HEIs follow these policy and guidelines to provide increasing access to quality higher education in Malaysia. Malaysia, as a country has also taken steps in focusing on developing massive open online courses and promote future proof talents based on the needs of the 4th industrial revolution.

In 2021, the MoHE requested COL to support assessing the status of technology-enabled learning in select universities of Malaysia by adopting COL's TEL Benchmarking Toolkit. Universiti Kebangsaan Malaysia (UKM) is one of the six universities identified by the MoHE. The other universities are:

- Universiti Malaya
- Universiti Pendidikan Sultan Idris
- Universiti Putra Malaysia
- Universiti Teknologi PETRONAS
- Universiti Teknologi Malaysia.

Universiti Kebangsaan Malaysia (UKM) is a public university in Malaysia without about 30,000 students on roll. Its vision is to “be a leading university that pioneers innovation in the construction of knowledge to achieve the aspiration of producing a society imbued with dynamic, learned and civic leadership.” And its mission is stated as “UKM is the National University that safeguards the sovereignty of the Malay language while globalizing knowledge in the context of local culture.” UKM aims to be “a leading and competitive centre of knowledge, enriched with technology”.

This report presents the findings of the TEL benchmarking carried out at the UKM during November 2021 - March 2022. It provides an overview of the methodology, the validated self-

study report and an action plan developed by the USPI team.

Process and Methods

Once UKM agreed to use COL's *TEL Benchmarking Toolkit*¹, COL engaged a consultant to support UKM and validate the self-study report. A brief description of the process followed is given below. It may be noted that in contrast to the advice in the Toolkit to use two experts for the validation process, this report used only one expert engaged by COL. This was due to the travel restrictions during the period and there were no other peer institutions ready to support this process.

UKM nominated 18 staff members to work on the ten domains of the *Toolkit* with representation for both men and women (Annex-A).

The activities during the Benchmarking exercise had five distinct stages:

- A. Setting-up processes and documentation: The Consultant discussed and agreed with the staff responsible for E-Learning regarding the protocols of sharing and copying mails. An online storage and collaboration space was created to share the data and reports coming from the 10 domain teams. The Consultant also introduced the benchmarking process to the members of the Benchmarking team at UKM, and MoHE representatives through video conference meeting facilitated by COL.
- B. Self-review: This was carried out by the team members and their reports with evidence shared via the online storage and collaboration space.
- C. Validation of self-review: This was carried out by the consultant. In the process, several queries were made to provide additional information and the Consultant moderated the scores, where the evidence provided were not sufficiently justifying the scores or aligned with the rationale.
- D. Action Plan Development: A draft three-year action plan was prepared by the teams, and the Consultant interviewed five nominated key stakeholders (Annex-B) to discuss the Action Plan. Feedback was consolidated and provided to the University representative and back-up person by the Consultant. Annex-C presents key strategic actions that are needed to make UKM a strong institution implementing TEL.
- E. Closing and Reporting: The Consultant also presented the findings in a video conference session with the senior management, key team members of the TEL Benchmarking at UKM, and MoHE. The present narrative report is also part of this stage, where the report has been reviewed by the university concerned before submitted to the MoHE.

Validated Self-Study Report

COL's TEL Benchmarking Toolkit has ten domains to ensure that a base level of quality practices is present. Each of the benchmarking domains contains four to six performance indicators (PIs). Inherent within the PIs is the understanding that an institution may score well in some domains but score low in other domains. This information is then used as a stimulus to

¹ <http://oasis.col.org/handle/11599/3217>

improve where needed promoting a cycle of continuous improvements.

The benchmarking domains are:

1. Policy
2. Strategic Plan
3. IT Support
4. Technology Applications
5. Content Development
6. Documentation
7. Organisational Culture
8. Leadership
9. Human Resource Training
10. Technology-Enabled Learning Champions



Figure 1: Ten dimensions of TEL Benchmarking at UKM

Policy

Score: 5

Description: The existence of a TEL policy provides direction for the use of technology in learning and teaching. It can be known by other names, such as an eLearning Policy, but its focus is to integrate technology in teaching and learning.

UKM has a well-established TEL policy that was introduced in 2008 to ensure that all UKM study programs were revamped to meet the requirements of the Malaysian Qualifications Framework which focus on basically Outcome-based Learning.

The policy also includes the requirement for lecturers to attend a special training in pedagogy before they can be confirmed in their position. As a result, a major revamp of all academic programmes in UKM were carried out.

Following that, an audit based on Code of Practice Program Accreditation (CoPPA) was conducted in 2008 and 2009. Training for lecturers has also been conducted so that they can carry out appropriate teaching-learning activities which suit the Outcome-based Learning. Besides that, new lecturers are required to go for special training on pedagogy for them to be confirmed.

The vision and mission statements related to TEL are available in the UKM Centre for Teaching and Curriculum Development (CTCD) website which align with the UKM Vision and Mission on teaching and learning.

The vision and mission are translated across the organisation from the top management to the grassroot level through the circular passed from the top management to the faculty/ centre/ institute level.

The university uses UKMFolio, a Moodle LMS. Thus, all courses offered must satisfy a blended learning requirement which is being implemented every semester. In order to achieve the strategic academic goals to apply technology in teaching and learning, the blended learning courses has become one of the requirements in academic career promotion.

Strategic Plan

Score: 4.75

Description: The strategic plan ensures the commitment to TEL is implemented in a time- bound manner.

The strategic plan on TEL is cascaded down from the top management of the universities to the UKM Centre for Teaching and Curriculum Development (CTCD). The CTCD came out with a Teaching and Learning Policy (2017) on the implementation of teaching and learning, including strengthening TEL among academic and professional staffs.

The strategic plan on TEL from the top management of UKM has been shared among all staff and faculty members through a publication, talks and seminars.

The strategic plans related to TEL specified goals and measurable outcomes, which are listed in the UKM Strategic Plan 2019-2021, as well as the UKM Strategic Plan 2021-2025. The plans with measurable outcomes were cascaded down to the CTCD to be implemented.

The financial provisions are adequate for the implementation of TEL in UKM. Since budget of the university is tight, the strategic plans are executed in phases, thus financial provisions for TEL are also approved according to planning phases and will require to be increased over time.

IT Support

Score: 4

Description: The IT support department or a similar department is responsible for a centralised

or decentralised approach to providing infrastructure support in UKM.

The IT department of UKM called Pusat Teknologi Maklumat (PTM) or Information Technology Centre oversees all system and technology related with UKMFolio. The IT department support the whole spectrum of IT products and services. The Head of IT has various qualifications including a Ph.D. in Computer Science (Software Engineering). There is a dedicated team that manages UKMFolio.

A policy related to ICT is well established since 2016, which was approved by the University Board of Directors in 2015. The policy ensures adequacy and security of ICT facilities as they are essential for enhancement of teaching and learning, research, and development (R&D) ecosystem in UKM.

The Head of IT is answerable directly to the Vice Chancellor and attends the fortnightly meeting with the senior/top management.

UKM has a committee that oversees the ICT Policy, namely Jawatankuasa Pemandu ICT, which is chaired by the Vice Chancellor and its members comprise the University's senior/top management.

Technology Applications

Score: 4.75

***Description:** Appropriate technologies are deployed for teaching, learning and assessment as per standard academic practices.*

The IT network including the hostels has improved much in the last 5 years although sometimes suffering from instability. Hardware infrastructure for teaching and learning in UKM are adequate.

For teaching and learning in UKM, the LMS used is called UKMFolio which is a Moodle-based software package. It can be accessed via web and mobile apps.

A policy related to ICT is well established since 2016, which was approved by the University Board of Directors in 2015. The policy ensures adequacy and security of ICT facilities as they are essential for enhancement of teaching and learning, research, and development (R&D) ecosystem in UKM.

Content Development

Score: 4.5

***Description:** Availability of both infrastructure and human resource support for digital content development is crucial for effective TEL implementation.*

The implementation of TEL in UKM is being supported by Pengajaran-UKM (CTCD), PTM (ICT) and UKM-Shape. The Centre for Teaching and Curriculum Development has strong support on content development.

In UKM, all lecturers are responsible for their teaching and learning content. Skills empowerment related to ICT and content development trainings are constantly provided to the

academic and technical staff. Training programmes are organised to enhance e-learning skills. The open educational resources (OER) are provided in the Pengajaran-UKM (CTCD) website, as well as in the UKMFolio.

The Pengajaran-UKM provides all educational resources which is fully supported by UKM policy.

Documentation

Score: 4.75

***Description:** There is adequate documentation in the form of guidelines, handouts, and manuals available (online/offline) for use by the stakeholders.*

All resources can be accessed by academics from Pengajaran-UKM (CTCD) website and UKMFolio. There are sections available in UKMFolio for academics and students called 'Jom Mulakan Pensyarah' as well as FAQ sections, complaints or aids needed through the 'Aduan' section. All resources can be accessed by students from Pengajaran-UKM (CTCD) website and UKMFolio.

All resources on implementation and sharing sessions through webinars can be accessed by public from Pengajaran-UKM (CTCD). The Pengajaran-UKM (CTCD) also provides circulations, guidelines, and documents to be referred by all UKM stakeholders and accessed through the CTCD website and shared via emails.

Organisation Culture

Score: 4

***Description:** The organisational culture supports and fosters innovation, teamwork, learning and sharing to strengthen TEL.*

The teaching, learning and assessments sharing sessions were conducted by Pengajaran-UKM regularly through a series of webinars. All webinars are recorded and can be accessed through the CTCD website. Besides that, Pengajaran-UKM encouraged all faculty, institutes, and centres to conduct activities related to teaching, learning and assessments.

The sharing sessions on TEL came from various fields, both from academics and professionals. All invitations of activities were announced to all UKM citizens through emails and social media such as FB, Telegram, and a WhatsApp group.

Innovations to enable learning with technology and sharing sessions on teaching and learning are fostered in and outside of UKM. An engagement with all researchers and practitioners is held annually through "The Congress and Innovation Competition in Teaching and Learning (kNovasi)" held from 2014 - 2021. Innovations are shared through videos and published in magazines which are distributed to all universities nationwide.

Leadership

Score: 5

***Description:** Leaders in the organisation are enthusiastic about TEL and support an evidence-based approach to decision making in relation to technology adoption.*

The leaders at UKM are actively involved in the implementation of TEL. All activities and

implementations of TEL are discussed regularly between the Deputy Vice Chancellor and Pengajaran-UKM (CTCD). The senior management in UKM frequently meet to review, monitor, and evaluate the progress of TEL with the Pengajaran-UKM Director. The meetings are at least once a month but can be up to three times per month.

The senior leaders in UKM are supportive and encourage the use of TEL through many activities such as conferences, webinars, and research opportunities as well as circulation of information if needed. The UKM leadership provides extensive motivation to faculty and staff members to use TEL through annual recognition of achievements and appraisals.

Human Resources Training

Score: 4.5

Description: Human resources are treated as key in delivering quality teaching and learning using technology. Staff training to strengthen the adoption of TEL is a regular feature in UTP's professional development programmes.

Training to use technology to the faculty members occur by qualified staff. In UKM, many trainers are recognized as Apple Distinguished Educators (ADE), Apple Teachers as well as recognized globally. Faculty and staff members are encouraged to upgrade their skills in the use of TEL for free. All formal training is available from The Center for Leadership and Professional Development UKM (Professional UKM), while informal training is available from Pengajaran-UKM website through a series of webinars (2020-date) and workshops (2014-2019). Although many workshops were prepared, participation are considered to be on the lower side, due to clashes with other meetings and events.

Support staff assisting in TEL are from Pengajaran-UKM, ICT@UKM, UKM Shape, while departments helping to develop TEL content are from Pengajaran-UKM and UKM Shape. Teachers trust the support received from instructional designers and technology support staffs. Users in UKMFolio increased from 80 to 92.6%. Support staff from ICT@UKM are highly skilled to provide support to teaching staff.

TEL Champions

Score: 4.5

Description: The existence of a group of teachers to champion TEL initiatives helps create a supportive environment for the adoption and scaling up of different technologies.

Early adopters in TEL come mainly from Education Faculty. However, there are also came from other faculty members. There are many TEL champions in UKM and many of these actively research and disseminate good practices in TEL.

Many teachers who can take active leadership roles in developing appropriate TEL strategies and policies in the organisation come from Faculty of Education with some from other faculties.

Key Observations from the Report

The overall score of 4.75 on a scale of 5 shows that UKM is very well placed to increase the quality of TEL. The TEL benchmarking team at UKM thus has identified several

recommendations in the action plan (Annex-C) to make further progress with TEL implementation. There is also strong buy-in to these from the senior management. However, some key areas where renewed focus may be placed are:

- Increasing the number of content developers/animators for development of digital modules.
- Strengthen the use of OER by contributing more resources with open licenses.
- Include students in content development, wherever possible and adopt open educational practices.
- Provide multiple pathways for the staff to improve their pedagogical and technology skills in addition to refresher in their own discipline.
- Identify and recognise champions to spread the positive energy needed for change.

Annex-A: The UKM Benchmarking Team

Prof Ir Dr Ahmad Kamal Ariffin Mohd Ihsan	Director, Center for Teaching and Curriculum Development (Pengajaran-UKM)
Assoc Prof Ts Dr Zulkefli Mansor	Deputy Director (Curriculum Development), Pengajaran-UKM
Assoc Prof Ts Dr Muhammad Helmi Norman	Deputy Director (Instructional Technologies), Pengajaran-UKM
Assoc Prof Dr Azmin Sham Rambely	Deputy Director (Research and Innovation in Teaching), Pengajaran-UKM
Assoc Prof Dr Raihanah Mohd Mydin	Deputy Director (Teaching Excellence and Quality Management), Pengajaran-UKM
Prof Dr Ahmad Rohi Ghazali	Assistant Dean (Teaching & CITRA), Faculty of Health Sciences
Prof Dr Tong Seng Fa	Assistant Dean (Teaching & CITRA), Faculty of Medicine
Dr Sakhinah Abu Bakar	Assistant Dean (Teaching & CITRA), Faculty of Science and Technology
Dr Hasanah Abd. Khafidz	Assistant Dean (Teaching & CITRA), Faculty of Islamic Studies
Dr Nasir Selamat	Assistant Dean (Teaching & CITRA), Faculty of Social Sciences and Humanities
Dr Syaimak Abdul Shukor	Assistant Dean (Teaching & CITRA), Faculty of Technology and Information Sciences
Assoc Prof Dr Rozilawati Razali	Director, Center for Information Technology (PTM)
Mr Mohamad Zainuddin	Senior Information Technology Manager, PTM
Mr Ermizal Sha Hassan	Division Head, Technology and Platform, PTM
Mr Mohd Amin Musa	Division Head, Server Management and Database, PTM
Mr Wan Mohd Zulkhir Wan Hassan	Senior Information Technology Manager, Network Division, PTM
Mrs Nor Azlina Abd Rahman	Information Technology Officer, PTM

Annex-B: Interviews conducted by the Consultant

1. Faculty member/administrator: Dr. Abdul Hadi Azman, Teaching and Learning Coordinator, Faculty of Engineering and Built Environment (FKAB)
2. Akademik-UKM (An entity who oversees academic issues including rules and academic integrity): Ms. Suhaida Abd. Rahman, Senior Assistant Registrar (Head of Examination Unit for Undergraduate), Akademik-UKM (Center of Academic Management)
3. A student representative (Main stakeholder of TEL): Mr. Avinash, UKM registered student

Annex-C: Action Plan

(These are some of the key actions identified by the UKM staff. All figures are estimates only).

	From When (month and year)	By when (month and year)	By whom	With what resources (technical and monetary)	Indicators of success (quantify where possible)
Policy					
a. Compulsory training on UKMFolio (UKM LMS) to all new staff with condition mandatory to pass	Jan 2021	Dec 2025	Pengajaran-UKM, Human Resource Dept, ProfessionalUKM	In-house experts and budget from DVC Portfolio	5 Training modules, 5 cohorts of new lecturers (about 20-25 ppl)
b. Develop and implement campus-wide IT governance model/framework	July 2022	July 2025	PTM & a committee	PTM	A framework
c. Enhanced technology-related training to all staff: Completion of minimum two courses per year related to education and technology	July 2022	July 2025	Pengajaran-UKM, Human Resource Dept, ProfessionalUKM	In-house experts and budget from DVC Portfolio Budget planned RM25000/yr for 2022-2025.	A human resource policy
Strategic Plan					
a. Reengineered UKM Business Process in the redevelopment of University Information Systems	July 2021	July 2025	Apps Dev Committee & PTM	In-house and outsource experts. Budget is in the ICT Budget Plan Budget RM100,000/year (2022-2024)	The existence of Master Plan for Apps Redevelopment & Improvement
b. Transformation of UKM to be a Digital Campus: Development of Immersive Virtual Laboratory & UKM Mobile Apps	July 2021	July 2025	PTM, FTSM, Pengajaran-UKM	In-house and outsource experts. Budget is in the ICT Budget Plan amounted RM500,000.	The existence of Master Plan for Apps Redevelopment & Improvement, new MyUKM Apps, GayaSiswa

c. Empower learning activities through data analytics by creating a Digital Learning Dashboard	July 2021	July 2025	A committee consists of PTM, Graduate School, Deans, Siswa UKM	In-house and outsource experts. Budget is in the ICT Budget Plan RM120,000.	The existence of MasterPlan for Apps Redevelopment & Improvement, Digital Learning Dashboard
IT Support					
a. Increase number of manpower (programmers & content developer in CTCD(Pengajaran-UKM))	Jan 2023	Dec 2025	PTM, Human ResourceDept	Univ/JPA (Govt) Budget RM50,000/yr (2022-2025)	10 additional manpower
b. Align IT services through the adoption of industry best practices	Jan 2022	Dec 2025	PTM, Alumni-UKM	Univ budget	Policy/Framework, Program/Modules
c. Strengthen cloud-based communication & collaboration platforms	Jan 2021	Dec 2025	PTM, ICT Committee	KPT (Edu.Ministry), PTM	Integrated Cloud-based comm & Collab. platform
Technology Applications					
a. Increase budget can be allocated to further upgrading all systems hardware and software including servers	Jan 2021	Dec 2025	DVC, PTM	Univ budget Plan budget RM100,000/yr	Upgraded hardware and software
b. Unified communication platform	Jan 2021	Dec 2025	PTM & Apps Dev Committee	In-house and outsource experts. Budget is in the ICT Budget Plan	FAce-Lift of MyUKM Apps
c. Improve security and university data including upgrading software and hardware for academic integrity	Jan 2021	Dec 2025	PTM, Pengajaran-UKM, a committee (researchers, programmers, Pengajaran-UKM)	In-house experts, T&L Fund, Univ. ICT Strategic RM30,000 (2021)	Integrated Proctored Exam system, Enhanced Data Security Policy
Content Development					
a. Increase the number of content developers/animations for development of digital modules	Jan 2021	Dec 2025	Pengajaran-UKM, UKM-SHAPE, Human ResourceDept	Univ/JPA (Govt) Budget RM50,000/yr (2022-2025)	5 programmers (2021)
b. Skills empowerment related to ICT trainings constantly provided	Jan 2022	Dec 2025	Professional-UKM	Univ budget	ICT Training Modules
c. Increase the number of open educational resources	Jan 2022	Dec 2025	Pengajaran-UKM	In-house experts, no budget	2 more OER
d. Include students in content development	Jan 2022	Dec 2025	Pengajaran-UKM	In-house experts, no budget	A higher percentage of students create content

e. Optimise advanced approaches in TEL: e.g., AR, VR and AI technology	Jan 2021	Dec 2025	Pengajaran-UKM, R&Dcommittee	In-house experts, Univ budget (RM100,000 2021)	20 modules/apps/ tool related to AR, VR, AI technology (2021)
Documentation					
a. Digital modules- UKM MOOC & Micro-credential modules	Jan 2021	Dec 2025	Pengajaran-UKM, -UKM-SHAPE	Univ budget & in-house experts RM100,000 (2021)	66 MOOC courses (2021)
b. Upgrading E-repository to all kinds of documents & data analytics	Jan 2022	Dec 2025	Pengajaran-UKM, PTM, R&D committee	Univ budget included above	Upgraded UKM e-rep system
c. Activity automation to enable easy access to documents	Jan 2022	Dec 2025	PTM, Library-UKM	In-house experts, Univ budget RM30,000 (2021)	Integrated and accessible system. Students and staff indicate that documentation is adequate.
Organisational Culture					
a. Transformation of organizational culture to a digital culture	Jan 2021	Dec 2025	Pengajaran-UKM, Faculties	In house experts, Univ budget (RM100,000 2021)	Digital culture framework UKMFolio
b. Empower culture of knowledge creation and sharing across the organisation	Jan 2021	Dec 2025	Pengajaran-UKM, Faculties	Pengajaran-UKM & Univbudget (RM50000 2021)	121 programs (2021)
Leadership					
a. More technology experience be provided for leaders of university	July 2022	Dec 2025	Pengajaran-UKM, PTM	Pengajaran-UKM, Univ budget	2 programs
b. Investment on ICT to have more current technology software available for staff	Jan 2021	Dec 2025	PTM, Pengajaran-UKM	Univ budget	Blueprint Future Ready LMS UKM
c. Leaders to capitalize on their influence to build partnership especially with the industry	Jan 2021	Dec 2025	Pengajaran-UKM, Alumni	In-house experts and Alumni@Industry, Univ budget	Professional Learning Conversation Program (3series)
Human Resource Training					
a. Professional development for all levels of the management and staff using ICT	Jan 2022	Dec 2025	Profesional-UKM, Pengajaran-UKM	In-house and outside experts, Univ budget	Regular training schedule
b. Provide multiple ways for staff to learn tech skills	Jan 2022	Dec 2025	Pengajaran-UKM	In-house experts, no budget	Monthly events, clinics(one-on-one hands-on training), webinars
c. Create incentives for faculty to adopt technology and incorporate into their coursework	Jan 2021	Dec 2025	Pengajaran-UKM	in-house experts, Pengajaran-UKM, Univ budget	AktivUKM Teaching Awards Ceremony(2021)

TEL Champions					
a. Identify change champions to spread the positive energy needed for change	Jan 2021	Dec 2025	Pengajaran-UKM	In-house experts, Pengajaran-UKM	Active Learning Ambassador (68 faculty members were appointed in 2021)
b. Fostering design thinking mindset from champions for staff development activities	April2021	Dec 2025	Pengajaran-UKM	In-house experts, R&D committee	Design Thinking Modul (1 module-2021) Monthly Active Learning Workshop (13 planned workshops in 2022)
c. Champions provide digital portfolios and example of good practices	Jan 2022	Dec 2022	Pengajaran-UKM	In-house experts, R&D committee, DVC Portfolio budget (RM75000 2021)	Digital Portfolios with educational research projects (13 portfolios)



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